CORONA®

SEASON AFTER SEASON

# PRINCIPLES OF PLANTING

## Definitive Guide for Planting Confidence

# THE BASICS

## KNOW YOUR SOIL • KNOW YOUR CLIMATE ZONE • KNOW YOUR SITE
## KNOW THE FUNDAMENTALS • USE THE RIGHT TOOL FOR THE JOB

With these basic principles in hand, you have all the prime information you need to follow the most significant principle: **Suit the plant to the site.**

Most garden-planting projects can be achieved successfully using the tools described here; large scale landscaping projects, however, are best left to a professional who has the heavy equipment needed for excavation, contouring and so on.

Find a certified landscape contractor
**National Association of Landscape Professionals**

*Source: National Association for Landscape Professionals*

# GROW WITH YOUR GARDEN

We all have our reasons for gardening. Some find joy in growing their own food or creating beautiful, calming spaces. For many, it's a therapeutic way to reconnect with nature, while others are driven by the desire to support pollinators. Whether you garden for beauty, sustenance or peace of mind, this versatile hobby offers countless rewards for all who embrace it.

Understanding the principles of planting is key to cultivating a thriving outdoor space. In this guide, we'll walk you through everything you need to know to foster strong beginnings for your garden—from understanding your soil composition to choosing the right tools for the job. And because good tools are an investment, we've included tips on how to care for them so you can keep them in prime condition for years to come.

*Source: National Association for Landscape Professionals*

# GROW WITH YOUR GARDEN

**Know Your Soil**
Understanding the type of soil you're working with is fundamental to successful planting. Different soil types—including sandy, loamy and clay—have distinct characteristics that influence their pH, water retention, drainage and nutrient levels.

**Know Your Zone**
Plants prefer their natural climate, so it's best to pick the ones that will thrive in your region. The USDA Plant Hardiness Zones are based on the average minimum winter temperature, which can help you determine which plants can survive your area's coldest months.

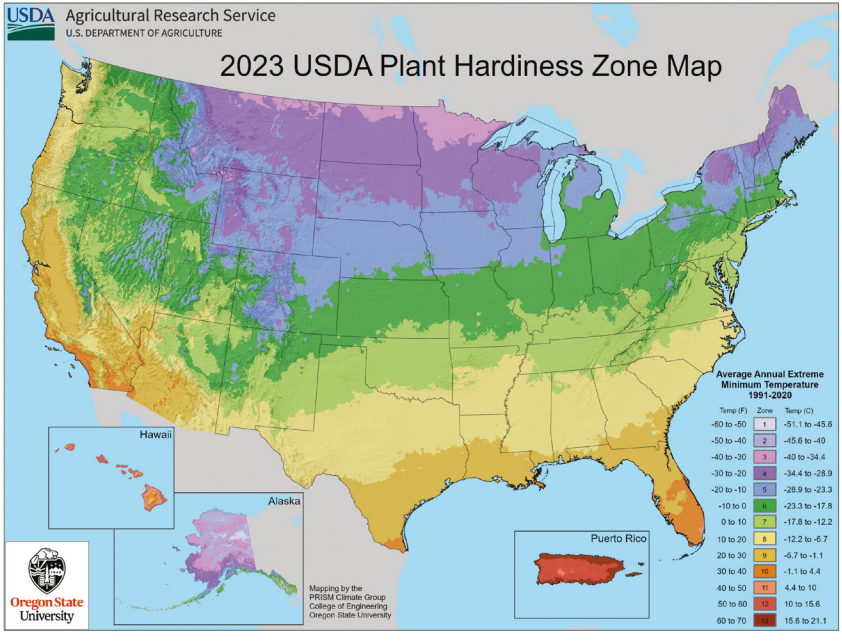
**Know Your Site**
Paying attention to things like available space, sun exposure, wind protection and drainage can help ensure your site aligns with your plant's needs.

**Know Your Fundamentals**
Mastering the basics of planting will set you up for early success. Do your research on how best to water, space, fertilize and prune your specific plants.

**Know Your Tools**
Having the correct tools on hand not only makes planting easier; it also fosters healthier plants. Brush up on your knowledge of the different types of spades, shovels, trowels, forks, shears and watering tools.

*Source: National Association for Landscape Professionals*

# HOW AND WHEN TO PLANT


USDA Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE
2023 USDA Plant Hardiness Zone Map
Hawaii
Alaska
Puerto Rico
Oregon State University
Mapping by the PRISM Climate Group College of Engineering Oregon State University
Average Annual Extreme Minimum Temperature 1991-2020
Temp (F) Zone Temp (C)
-60 to -50 1 -51.1 to -45.6
-50 to -40 2 -45.6 to -40
-40 to -30 3 -40 to -34.4
-30 to -20 4 -34.4 to -28.9
-20 to -10 5 -28.9 to -23.3
-10 to 0 6 -23.3 to -17.8
0 to 10 7 -17.8 to -12.2
10 to 20 8 -12.2 to -6.7
20 to 30 9 -6.7 to -1.1
30 to 40 10 -1.1 to 4.4
40 to 50 11 4.4 to 10
50 to 60 12 10 to 15.6
60 to 70 13 15.6 to 21.1

Know Your Climate with
**Hardiness Zone Map**

*Source: Irrigation Association*

**Know Your Zone**

Zones are climate regions established by the United States Department of Agriculture to give an indication of plant hardiness, or how resilient it is to degrees of cold within a given range, based on average minimum temperatures. There are 13 zones divided by ten degrees per zone. Each of those zones is further divided into two half zones by five degrees, creating a total of 26 hardiness zones. The American Horticultural Society also provides gardeners with a Heat Zone map based on average regional high temperatures.

Check your zone by visiting the Irrigation Association website, where you will find a link to the Hardiness Zone map and other valuable resources. Local, independent nurseries generally focus on stocking plants that are suitable for your zone.

# SUNSHINE AND SHADOWS

To help gardeners understand how to pick the right plants for their garden's light conditions, plant tags describe a plant's preferred exposure as full sun, part sun or full shade.

Full sun means a plant needs a minimum of 6 (and ideally 8 or more) hours of bright sunlight each day. Part sun brings that number down to 3 to 6 hours, and while the term part sun is often interchangeable with part shade, sometimes the subtle difference in word choice indicates that the plant prefers a slightly sunnier or shadier site. Partially sunny or shady sites may get direct sun for a short but concentrated period, or they may have an hour here and there of sun throughout the day. Another possibility is that the site gets filtered light. This is especially common in areas where there are many deciduous trees. Full shade means fewer than 3 hours of sun each day. Shady sites occur under dense canopies of mature trees—especially evergreens—or when deep shade is cast by a nearby structure.

When a plant tag indicates more than one light preference—for example, full sun and part shade—this can mean two things. One, that the plant will tolerate both types of conditions, so it is relatively flexible in its preferences. Or two, that the plant prefers full sun in cooler climates but requires part shade in warmer ones.

In most cases, a plant that tolerates some shade will require a bit more water if it is grown in full sun, especially for the first season or two after planting. Keep in mind, most plant tags are the same, whether a plant is being sold in Texas or Toronto. Warm-climate gardeners should plan on giving a plant some shade, especially during the hottest part of the day. Shopping at a local garden center will ensure you get the advice you need to grow a plant successfully in your area.

Though a plant will perform poorly if light conditions are not ideal, it is possible to get it back on the path to beauty by transplanting it to more appropriate conditions. Here are some signs that signal a plant isn't happy with its current location:

*Source: Proven Winners®*

# SUNSHINE AND SHADOWS

**Not Enough Sun**

- Growth is tall and spindly; the plant appears to be "stretching"
- Stems are weak and floppy
- The plant flowers very little or not at all
- Leaf and/or flower color is dull and muddy

**Too Much Sun**

- Leaves are yellow or look washed out, often with brown edges
- Flowers don't last long or develop brown edges shortly after opening
- The plant wilts frequently and is difficult to keep watered

Plants that are sited in their preferred location will look better and require less maintenance, so a little research goes a long way. Read labels carefully and observe your plants for signs that they aren't performing as well as they should be.

*Source: Proven Winners®*

# WISE WATERING

Even if a plant is considered drought tolerant, it will require regular irrigation until it is established by the second or third growing season. Here are some guidelines to remember:

- Group plants together according to their water needs. Moisture-loving plants will thrive in a community with other plants that require the same level of irrigation. The same is true of plants that prefer a dry, free-draining site.
- Water slowly, deeply and infrequently rather than often and sparsely.
- Roots move toward moisture, so be sure to water both the plant's original root ball and the soil around it, helping ensure that roots move out into the native garden soil. Watering deeply to penetrate the root zone will keep roots from growing toward the surface where they'll be vulnerable to drought and disease.
- After the first year, or once plants are clearly strong and well-established, reduce their watering frequency.

*Source: Proven Winners®*

# KNOW YOUR SITE

Armed with the broad knowledge of your soil type, climate zone and light needs, the next most significant principle is to become familiar with the conditions of your garden. Remember, gardening is not an exact science. Some plants have specific preferences while others are adaptable and happy just about anywhere you place them.

**It Starts with Soil**

Soil pH is a key piece of information to have about your site. It indicates the degree to which the soil is acidic, alkaline or neutral, with "near neutral" landing between 6.8 and 7. The lower the number, the more acidic the soil. It is possible to amend soil, however, it requires frequent amendments and has the potential to become expensive with no guarantee of success—so it's best to work with what you have. There are easy-to-use testing kits available for home use, or you can send a sample to your local horticultural county extension agency for testing.

*Source: American Horticultural Society*

A soil is characterized by the parent material, climate, topography, time, vegetation and cultivation. Its texture is determined by the relative amount of variously sized particles, including sand, silt and clay. These traits are unlikely to change significantly from year to year, unless you import soil from outside your garden. Soil structure is determined by how these particles are arranged and grouped, which influences porosity, water retention, drainage and gas exchange.

**When to Test**

It's always a good idea to test the soil in a new garden and any area where plants are not growing well. Never add lime or sulfur to adjust the pH without first testing your soil, as this can compound the problem. A soil test provides a snapshot of the soil at a given moment in time. If you make major changes to the soil, such as adjusting the pH, annual tests are advisable to track the changes. When carefully performed and interpreted, soil tests identify problems and suggest amendments that lead to a healthy, well-balanced environment in which your plants will flourish.

# KNOW YOUR SITE

**Using Fertilizer Effectively**

Although applying nutrients is important for healthy plant growth, it should be done properly to maximize its effectiveness and avoid environmental damage. Whether you use natural or synthetic sources of fertilizer, you should first have your soil tested to determine your fertilizer needs, such as which nutrients are in short supply.

Most natural fertilizers take time to break down, so work them into the soil in advance of planting or active growth. Subsequent applications can be made by topdressing with dry formulations. Maintaining a continuous supply of organic materials, such as compost, will help sustain a balanced environment that is conducive to healthy plant growth.

**A Living System**

The soil environment is a living system that supports plants both physically—by providing anchorage for the above-ground growth—and nutritionally. While using synthetic fertilizers may be more convenient and less expensive in the short term, these products can cause significant imbalances in soil and water ecosystems in the long term. Instead, aim for sustaining a healthy soil system that minimizes environmental impact while maximizing results.

*Source: American Horticultural Society*

# SOIL TYPES AND AMENDMENT TIPS

**Clay Soil**
Clay particles are the smallest component in soil—less than .002 mm in size. They clump together to make a heavy, sticky, water-retentive growing medium. To improve clay soil, add organic matter, such as compost, planting mixes or well-rotted manure. Finely crushed rock worked into clay soil will also help improve drainage.

**Sandy Soil**
Sandy soil holds few nutrients because the particles do not adhere as well. Water drains through it quickly, taking any available nutrients with it, leaving plants poorly irrigated and malnourished. Again, the best amendment is compost and well-rotted manure or vegetable matter. These provide and store essential plant nutrients and help hold moisture in the plant's root zone. You can improve sandy soil over time with annual applications of 3 to 4 in. layers of organic compost on top of the soil.

**Loamy Soil**
Loam is the gardener's dream because it's rich, fluffy, moisture-retaining, microbe-friendly and easy to work with. Loam is a balanced combination of sand, silt, clay and organic matter, such as decomposed leaves, bark and manure. Not only does loam readily absorb water; its greatest attribute is that it retains moisture and nutrients that are readily available to plants, which makes for healthy, vigorous growth.

*Source: American Horticultural Society*

# GARDEN TOOLS FOR HEAVY WORK

**Selecting the Right Tools**

The best long-handled tools for planting will have smooth, close-grained handles made of American ash, sturdy fiberglass or steel. Handles should be closely fitted and securely attached to the head of the tool. This is a stress point when the tool is in use, so pay particular attention when comparing tools, looking for any signs of looseness or inherent weaknesses in construction. When selecting a shovel, look for one that is welded or has a riveted head-to-handle connection.

Bear in mind that the heavier the business end of a digging tool, the less work you'll have to do since the weight of the spade or shovel head will help drive it into the soil. A long handle also adds leverage as you turn the soil.

# GARDEN TOOLS FOR HEAVY WORK

**Shovel Types**

There are many types of shovels, all with their own distinct characteristics and uses. Some shovels have a long handle and a large, scooped blade while others have a short handle and a small, flat blade. Both types can have either a pointed or flat end.

Larger shovels are best for digging shallow holes and scooping or lifting materials, such as gravel, compost and soil. Pointed blades are good for working in places where surrounding plants have created a matrix of roots that must be sliced through, for breaking up the bottom of planting holes and for working in compost. Flat blades are useful for working in loose, friable soils found in established vegetable gardens.

# GARDEN TOOLS FOR HEAVY WORK

In either case, choose a tool that has a blade with a turned edge or step along the top where your foot can rest while digging. Now only will it protect your instep; it will also aid stability while digging. Other useful heavy-duty digging tools include a drain shovel with a long, rounded and slightly cupped blade. These can tackle heavy, clay soils and are typically used to dig deep, narrow trenches for installing drainage tiles or irrigation lines.

# GARDEN TOOLS FOR HEAVY WORK

**Fork It Over**

Sturdy garden forks come in several guises, from tough-tined digging forks to slender hay forks with a few delicate tines. In planting, a heavy digging fork is needed for preparing new ground and breaking up clumps of soil as you go. A short-handled border fork, or spading fork, makes a great partner to a border spade. Use it to backfill planting holes or to lift and divide plant clumps as the garden matures. A wide-tined manure fork is also extremely useful for forking mulch onto flower beds and for turning compost heaps. The best garden forks are forged from one piece of tempered steel, resulting in high-performing, durable tines.

# GARDEN TOOLS FOR HEAVY WORK

**Useful Extras**

A swan-neck draw hoe and a pronged cultivator are necessary aids for weeding and keeping the surface soil open, friable and free of weed seedlings. Choose a hoe with a sharpened, tempered steel blade edge that can easily cut through weeds on the surface. Its pointed corners can also help prepare soil for seed sowing.

A mattock is a good option for completing heavy-duty groundwork like breaking up root-infested soil or hard dirt and clay. It has two ends, with each serving a different purpose: the wide mattock blade breaks up dense, heavy soils and the pointed pick end fractures stumps, rocks and concrete.

# GARDEN TOOLS FOR LIGHT WORK

Although the previously described tools also require the use of your hands, hand tools generally describe the sort of small tool you would use for fine-tuning your planting. The best short-handled planting tools are made from stainless or tempered steel. You will likely need several types, including trowels, cultivators and weeders, as they come in handy for all sorts of planting projects.

The sides of a trowel blade should be curved upward to allow for scooping soil and holding loose materials. Some of their handles—like those with ComfortGEL®—are cushioned, which can be a real advantage when you have large quantities of annuals or bulbs to plant. As loose as the soil may be, this extra padding will minimize injury to the base of your digging hand and shoulder as you repeatedly drive the tool into the ground. The blades of some trowels are marked with a ruler that is useful for gauging hole depth, enabling more accurate planting. Our ComfortGEL® trowel even features a bag ripper for opening bags of soil.

CT 3314

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CT 3374

# GARDEN TOOLS FOR LIGHT WORK

A cultivator, or hand fork, complements the action of a trowel. It can be used to loosen the soil before troweling in a plant, loosen weeds for removal or work in a top-dressing of compost and fertilizers. Keep in mind that if you're looking for something to act as a claw, a small hand cultivator will work best.

A weeder is ideal for removing tap root weeds, such as dandelions. Its sharpened prong helps penetrate the soil and the serrated edge cuts through surrounding materials, removing the weed and its roots.

# TIPS FOR MAINTAINING YOUR TOOLS

Pruning tools that are dull, rusted or coated in sap or debris will not cut cleanly and will make plants more susceptible to disease and pests.

Clean tools after each use with a moistened cloth or towelette and mild cleaner like Lysol® or Pine-Sol® to remove loose debris. For harder, caked-on debris, use a stiff, wire brush before wiping tools down with a moist cloth.

Sharp tools will make better cuts and require less effort to power through cuts. Use our Carbide Sharpening Tool (AC 8300) to safely and efficiently sharpen and increase the precision and strength of your pruning tools. Make four to five passes on the cutting side of the blade and one pass on the flat edge to remove metal burrs. It takes only a few seconds, but will help keep your tools cutting like new.

***TIP:*** *Sharpening is crucial for maintaining your pruning tools and the same principle applies to digging tools. Sharpening shovels and hoes makes it easier to cut through hard soils and roots.*

# TIPS FOR MAINTAINING YOUR TOOLS

**Protect the Metal**
Apply a generous coat of machine or natural oil on the exposed metal. It will form a protective coating that prevents moisture and water from collecting on the metal. It also helps prevent debris from sticking to the tools during use, making them easier to wipe clean. Give wood handles a coat of linseed oil to protect the finish and prevent moisture from getting on the wood.

**Disinfecting Blades**
To prevent the spread of diseases from one plant to another, exposed tools should be disinfected. Avoid using harsh chemicals, such as bleach, as studies show that they can break down or degrade metal over time. Rubbing alcohol will evaporate quickly, disinfecting the tool and protecting it from rust.

**Rust Removal**
It happens—if your pruner or lopper spends a season out in the elements or was not properly cleaned after use, it will likely rust. Light rust can be removed with a fine grit sandpaper. If the rust is severe and the tool allows for it, you may need to replace the blade. Many Corona tools offer genuine replacement parts available on our website.

***TIP:*** *Do not use steel wool, it can introduce metal burrs into the blade that are prone to rust.*

**Inspection**
Before the season begins or before putting your tools up at the end of the season, inspect them for signs of wear that will affect performance. Check for stress cracks in wooden handles and loose pivot bolts and springs.

**Warranty**
Our lifetime warranty guarantees products are free of material and workmanship defects for the life of the tool or we'll replace it free of charge when returned along with the original proof of purchase.

Look for our genuine
**Replacement Parts**
at coronatools.com

# SEASONAL REMINDERS

**Summer**

When the weather begins to warm, it becomes increasingly important to keep an eye on the forecast for soaring temperatures and excessive rainfall, both of which can wreak havoc on your lawn and garden. Protect your outdoor space by:

- Spreading a two to three inch layer of organic mulch to increase moisture retention and reduce the rate of evaporation. Remember to spread out, not up.
- Converting spray systems to a slow and steady drip that has time to penetrate the soil.
- Watering in the early morning hours to allow the soil to absorb more water and reach the roots before it begins evaporating.
- Setting your lawn mower to the tallest setting to protect the grass and soil from the heat of the midday sun.
- Using native and adaptive plants that can survive on less water and tolerate the local climate.

# SEASONAL REMINDERS

**Fall**

Cooler weather often breeds unpredictable conditions, so it's a good idea to start tackling projects that have built up over the season before winter sets in. Here are some tools you may want to add to your garden shed:

- **Wheelbarrow:** A 6 or 10 cu. ft. wheelbarrow can help you winterize your space and haul spent plants to the compost bin.
- **Trug:** Wooden trugs are an ingenious way to collect remaining fruits and veggies from the garden.
- **Extended Tools:** Extended tools are the perfect length for clearing spent plants or weeds and spreading mulch in raised beds.
- **Extra Large Rake:** Wide-head rakes make fall leaf cleaning less of a hassle by helping you get the job done twice as fast.
- **Tree Care Tools:** Tree pruners and saws are must-have tools for clearing damaged, dead or diseased tree limbs that may become hazardous during winter storms.
- **Tool Sharpener:** A sharpening tool quickly restores straight edges so they're prepared for next season.
- **Trowel:** This all-purpose garden tool can be used for planting, digging, cultivating and aerating, which makes it perfect for planting spring bulbs.
- **Kneelers & Knee Pads:** Both of these accessories can help protect your knees while you work to close out the growing season.

# REFERENCES

Contact our partners for more information provided in this guide:

**American Horticultural Society**
7931 East Boulevard Drive
Alexandria, VA 22308
**(703) 768-5700**
**ahsgardening.org**

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